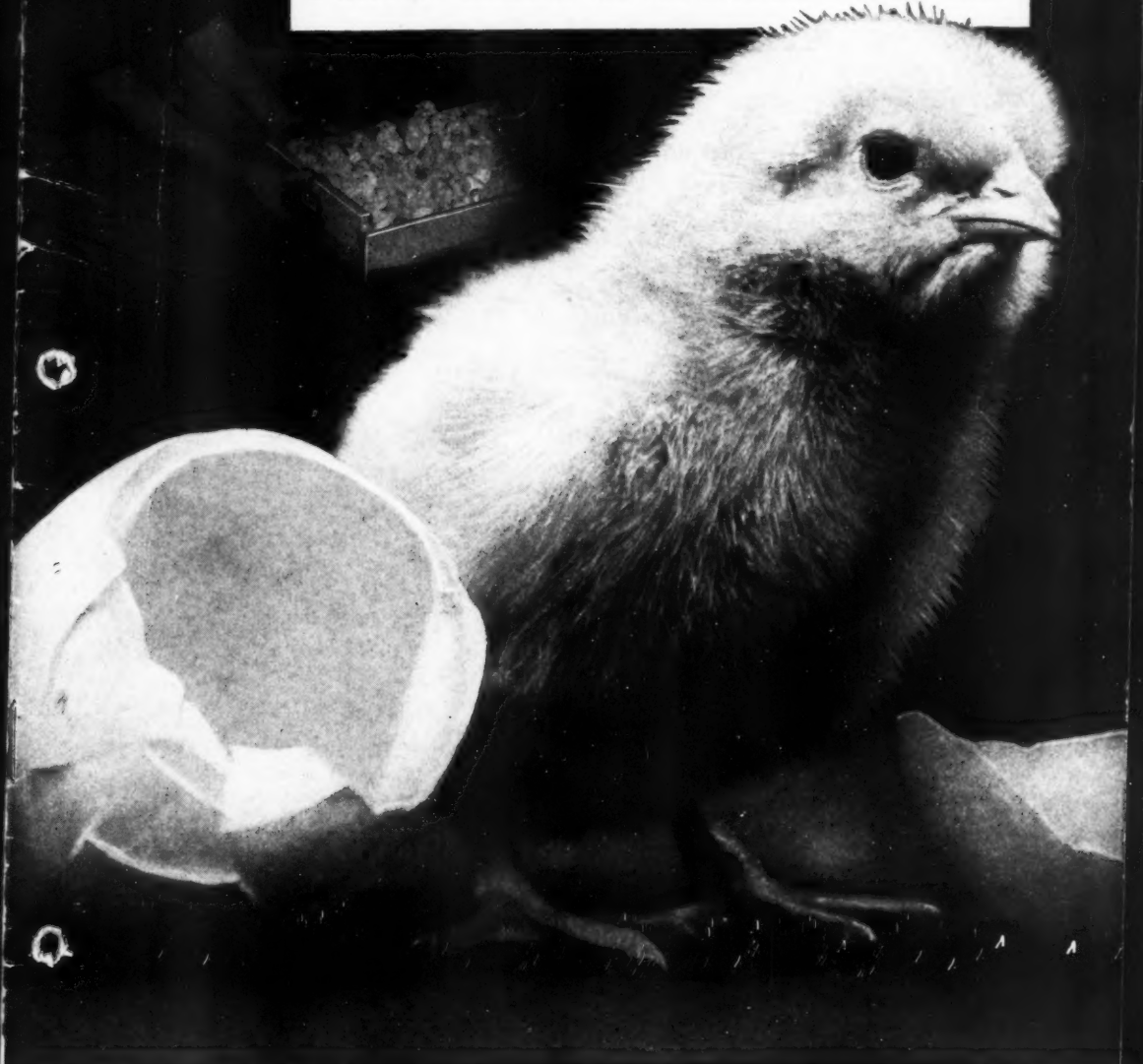
Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY



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January, 1936

Electricity on the Farm

Vol. 9, No. 1

IN THIS ISSUE

Uncle Sam Uses Electric Hotbeds

BY J. C. SCOTT

Electric soil heating speeded up plant growth to such an extent on a government agricultural project farm near Seattle, Washington, that 3 and 4 crops of plants were raised during the spring. And, according to Cecil Solly, Agriculturalist in Charge, with the raising of spring plants over, a new use of the units has been found —the beds are used to ripen green tomatoes which they do very satisfactorily. For details see page 7.

Simple Support for Cold Frame Cables

BY GEO. W. KABLE

Here is suggested a new method of supporting heating cables in a cold frame. Easy to install, and the cables are kept from sagging when hot by this simple wire trough. Procedure outlined on page 8.

Tropical Foxes

BY F. H. ALLEN

Electricity, that tireless farmhand, is ever seeking new fields to conquer. And, we now find it at work on a California fox farm helping to preserve as well as prepare the food rations for Mr. and Mrs. Fox. The story of the Gardner-Pruitt Fox Farm is interestingly told by the author on page 9.

Switch to Convenience

BY VERA B. MEACHAM

When you switch to convenience you switch to cooking electrically. An electric range with its thermostat, clock, lights, and other appliances all bundled up in a single unit is duplicated in no other type of range. Electricity is the modern fuel for the most exacting housewife. See page 12.

Seed Cleaning Is a Paying Practice

BY E. W. LEHMANN

Weed seeds can do considerable damage to crops, and, hence are of no aid in increasing the profits of the farmer. It is, therefore, advisable to get rid of as much as possible of this unwanted seed. It is a paying practice, and a number of methods of accomplishing satisfactory results with the aid of electrically operated machines is described by the author on page 16.

Miscellaneous Articles

Interesting Scenes at Home and Abroad, pages 14 and 15; An Inexpensive Soil Sterilizer, page 18; Here's an Electric Drill That's Easy to Make, page 19; Farm Chats About Electricity, page 20.

EDITORIAL

An old Roman proverb says, "Of evil grain no good seed can come." This has been aptly revised to: "Of evil seed, no good grain can come."

If grain for sowing contains weed seeds, the crop will be weedy. There's no more likelihood of getting a good, clean crop of grain from weedy seeds than there would be of getting a good flock of chickens raised in a weasel infested area. The stronger will ultimately predominate, and useful plants are no match for weeds.

There is no more profitable practice on the farm than seed cleaning. Every dollar spent for this work will bring many dollars back in better crops and higher prices. It is a task which can be done leisurely, yet thoroughly, during the long winter months.

Furthermore, it is a job that is actually enjoyable where electric power is available for operating the fanning mill.

In these days of modern equipment and modern power, there's no excuse for enduring the weed handicap to profitable crop production.

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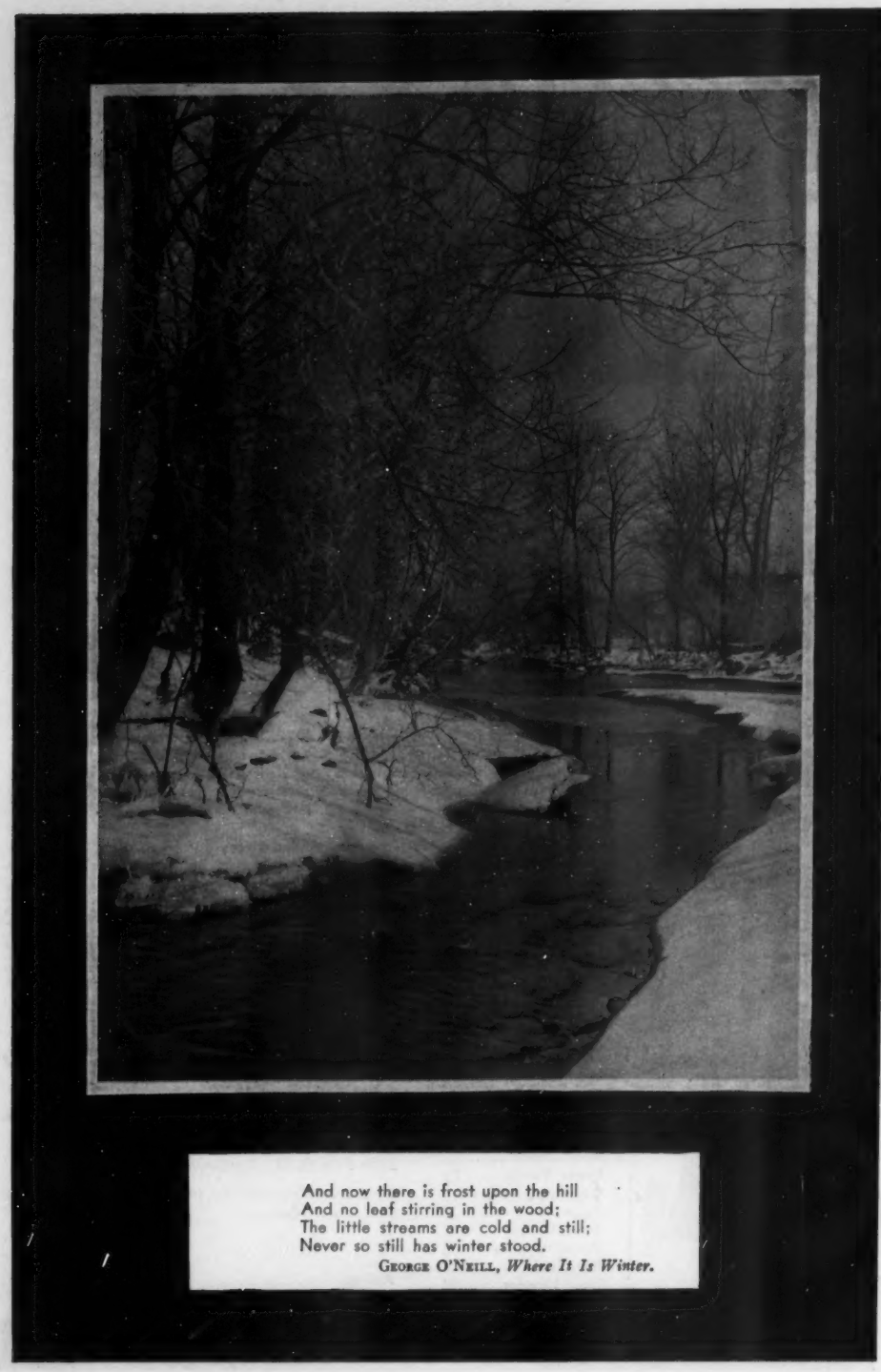


And now there is frost upon the hill
And no leaf stirring in the wood;
The little streams are cold and still;
Never so still has winter stood.

GEORGE O'NEILL, *Where It Is Winter.*

Uncle Sam Uses ★ ★ ★ ELECTRIC HOTBEDS

By J. C. SCOTT

THE Federal Relief Farm near Seattle, Washington, used electric hotbeds to produce 715,000 plants of lettuce, tomatoes, and cabbage for field planting during the spring of 1935.

There were four of these beds, each 75 feet long and 12 feet wide, with adequate provision for drainage underneath. About a mile of standard lead-covered hotbed cable furnished the heat, and eight thermostats, two in each bed, controlled the current so as to give just the temperature desired for each kind of plant.

It would have been impossible to grow this large number of plants in such limited space using manure for heat. But with the cable there was no limit to the heating period. As soon as one crop of plants was removed, another could be planted, and the temperature controlled as desired by adjusting the thermostats. In this way each bed raised three (and some four) crops of plants during the spring.

Heating began on February 28 and in five months 14,700 kilowatt hours were used to produce the 715,000 plants. This is nearly 50 plants for every kilowatt hour used. According to Cecil Solly, agriculturist in charge of this project, the electric hotbed for this particular work was ideal in every respect.

Mr. Solly also reports that he has found a new use for the electric hotbeds in the ripening of tomatoes. Green tomatoes are picked in the field and put into the hotbeds. The beds are then covered with sash which have been tilted on one side to give air circulation. The sash are then covered with canvas to keep the bed dark and warm.

Tomatoes have been ripened in three days, and Mr. Solly says it is much more satisfactory than depending upon the sun for ripening and at the same time running the risk of frost injury.

Temperature in the beds during the day was 65 to 70 degrees and about 58 degrees at night. It so happens that this temperature was sufficient to ripen the tomatoes without turning on the heat. However, should the temperature drop unduly low, it would be easy to turn on the electric heat to hasten ripening.

The canvas covering was not taken off the beds during the day, as the ripening proceeds much more satisfactorily in the darkness.

Approximately one mile of lead covered hotbed cable furnishes heat, controlled by thermostats, for these hotbeds on the Federal Relief Farm near Seattle, Washington.

A cold-frame, showing wire trough support for heating cables above the soil. This bed contains compost for the experimental winter growing of mushrooms.

Simple Support for COLD FRAME CABLES

By GEO. W. KABLE

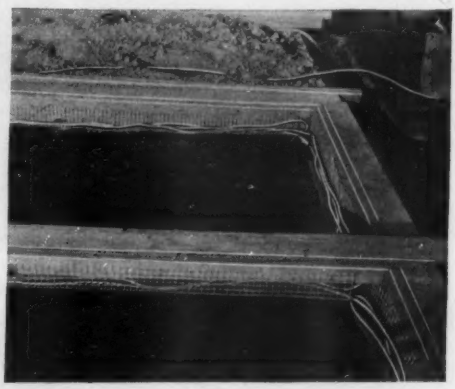
IN the growing of certain plants it is sometimes desirable to support the heating cables in the air above the soil of a cold-frame or hotbed. This heating of the air is very effective in protecting a cold-frame against frost, as the heat is immediately available as soon as the thermostat closes the circuit.

Several years ago we recommended supporting the heating cables on screw hooks placed around the frames and under the sash supports in cold-frames. The heating effect was quite satisfactory, but after a year or two of use it was found that when the cables were hot they sagged between the supports and produced weak places in the lead sheath where it doubled over the screw hooks. A new method has been tried recently which overcomes this difficulty and makes a very satisfactory support for the cable.

Ordinary ½-inch mesh hardware cloth is cut in strips about four inches wide. These strips are bent over a little one side of the center by doubling them over the edge of the cold-frame. One side is then tacked against the frame or center support with double pointed tacks or small staples, leaving an open trough to support the cable. Three small staples are all that is necessary to hold the trough against the side.

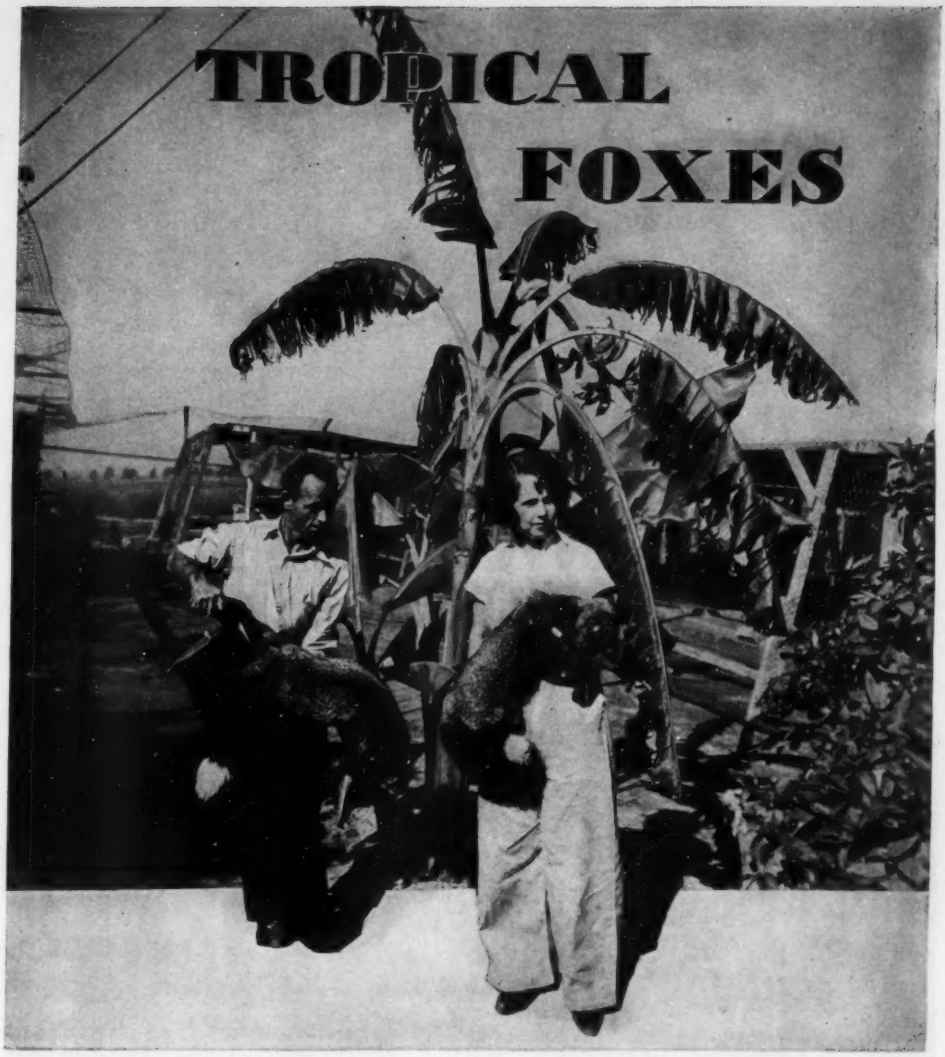
This open screen trough has the advantage of giving continuous support to the cable and permitting free air circulation around it. It is inexpensive, keeps the cable up out of the way, and can be easily removed in a few moments if desired.

Where heating cables are used in the air above the soil, the bed-soil should be as nearly level as possible. It has been found that in the bed shown in the accompanying illustration with the upper side eight inches higher than the lower side there is a difference in air temperature of as much as 10°F., the upper side being the warmer. This difference occurs even though the major part of the heating cable is placed at the lower side of the bed as shown. In some cases this variation in temperature may not be undesirable, but where it is, it may be largely offset by having the bed soil level. Heated air rises to the highest point and then banks down to the lower places.



Close-up view of wire troughs for supporting cold-frame heating cables.

TROPICAL FOXES



By
F. H. ALLEN

Foxes and bananas thrive on the same ranch at Manhattan Beach, California.

IT is a far cry from the popular conception of the frozen North's Fur Trapper to our rapidly growing local industry of sem-tropical fur breeding. This point was brought amusingly to my attention, when on visiting the Fox Farm of W. S. Gardner at Manhattan Beach, which spreads over a picturesque hillside within a mile of the Pacific Ocean, I came upon the amazing picture of a family of curious Silver Fox, their handsome and luxurious coats glistening in the sunlight, basking in the shade of a banana tree, its branches heavy with ripening fruit. In common with most of the unitiated, I've always believed that a fox thrived best when reared in the freezing snow-and-ice stretches of the North. In Los Angeles, it would seem Fox and bananas may be grown under the same climatic conditions. Silver Fox has become just another farm product, and Milady is able to pick her new neckpiece on the hoof, as it were.

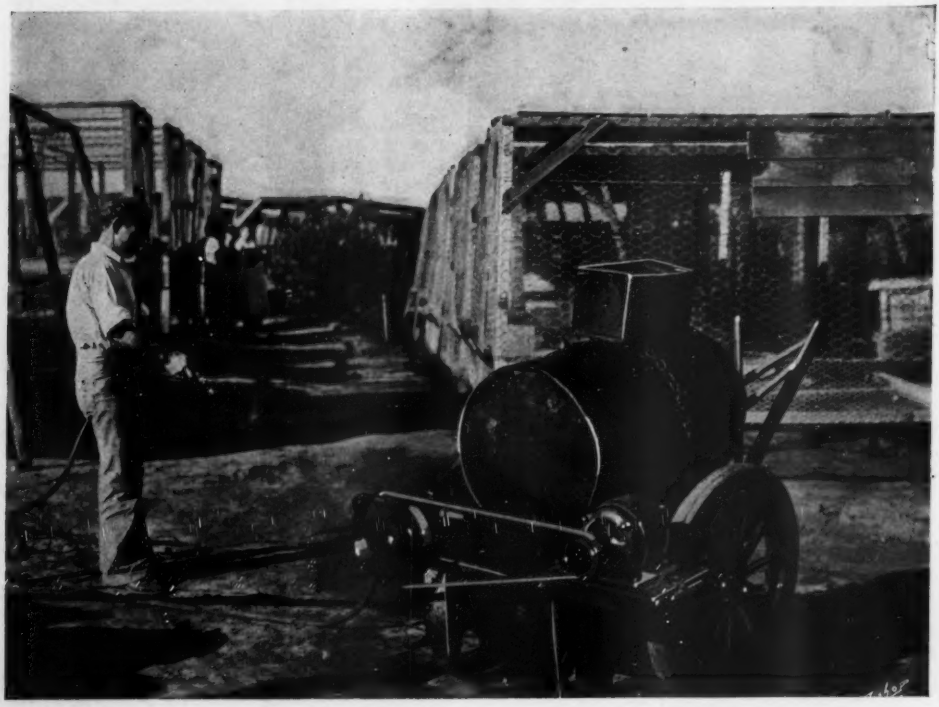
One of the questions most frequently asked the California Fur

Grinding, mixing, and cooling equipment that prepares and keeps food at the proper temperature on the Gardner-Pruitt Fox Farm.

Farmer is: How do local pelts compare in price and quality with those raised in the colder countries? In answer, Mr. Pruitt, the Manager, says: In competition, our furs have taken many prizes over Northern grown pelts, and the prices they bring on the market today are often much higher. We picked this location close to the ocean because we found that the sea breeze is especially beneficial in raising high-grade pelts, the salt in the air keeping the fur from becoming dry and brittle.

On the Fox Farm these beautiful creatures are not allowed to run loose, in packs, as might be supposed, but are housed in large wire cages, a pair in each cage. The houses have wooden roofs, wire floors

One horsepower electrical portable spray machine that assists in sanitation.



An avenue of fox pens in the Gardner-Pruitt Fox Farm, Manhattan Beach, California.

and are raised about a foot off the ground. A small wooden cage, without windows, it attached to each pen for sleeping quarters, which is connected with the wire cage by a wooden chute through which the fox enters his bedroom, and gives him the impression of a cave or a lair. These cages are arranged in avenues on a large field, which in turn is enclosed by a high protecting fence with guard fences at its top and bottom for extra protection. For the cunning Mr. Reynard frequently manages to escape in spite of the strictest surveillance, to satisfy his curiosity about the outer world. He is a most curious animal and, unlike his bored brothers in the Zoo, regards each visitor with intense interest.

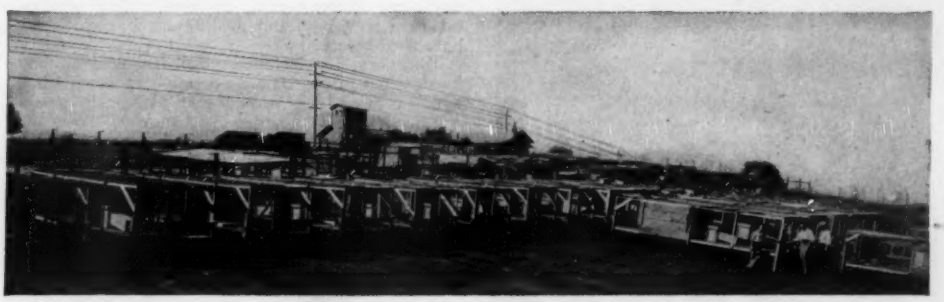
Diet a Big Factor in Fox Raising

I was especially intrigued with the commissary department of the Gardner-Pruitt Farm. No haphazard feeding here. A huge, electrically cooled, walk-in refrigerator, such as you will find in the average meat market, keeps the meats at their proper temperatures and permits quantity buying and subsequent savings on meat costs. There is an electric bone grinder as well as a meat chopper, and an electrically operated feed mixer, to insure the proper proportion of vitamins. The fox does not have an all meat diet; grains and greens are also a part of his rations, and all are carefully weighed and scientifically blended.

Over his feed house, Mr. Gardner has built a watch tower where he has a clear view of each pen.

From here he keeps a watchful eye on his pets, and avoids the necessity of patrolling the pens. This tower is especially helpful during the breeding season which begins any time after Christmas. The love life of a Fox is similar to that of a dog, both Mr. and Mrs. Fox being promiscuous in their sexual relations. Mr. Pruitt skillfully permits only the best specimens to breed, mating them carefully,

(*Continued on page 20*)



Pens housing more than 300 foxes, showing watch tower in distant center.

Switch to **CONVENIENCE**

By VERA B. MEACHAM

I HOPE I am not mixing anybody up, talking about electricity as a fuel. I've been talking about it, off and on, some ten or a dozen years, now, but of course when you come right down to the dictionary, and the wood pile in the back yard, electricity is not really a fuel at all. A fuel is something you burn for heat. You do not actually burn up any electricity to get heat from an electric stove. You just turn it on and let it run through the wires of the heating elements. That is what makes it so handy, and so different from fuels we have used before.

Take hay, for instance. Folks cooked on hay burners out in the Dakotas a couple of generations ago. I have long wished that some one would tell me just how they did it. Can you? Was the hay kept in a mow or stacked up like a wood pile? And did the boys of the family twist the ropes of hay and bring in great armfuls for baking day? What kind of a wood box would you build for hay?

However it was stored, and however it was fed into the wide mouth of the stove, it couldn't have been a very lasting fuel. The cook who used it must have been a part time stoker, too. But we

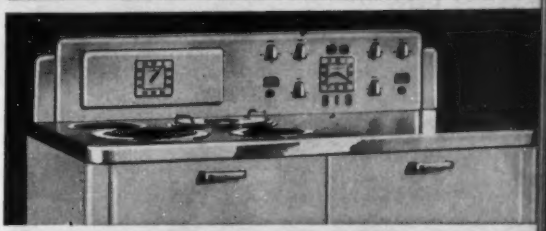
It is easy to build a fire in an electric range, as easy as turning on a light.

were that with most fuels for that matter.

Electricity is more convenient to use than hay because you can buy it all ready made in some distant power house, and you can have it delivered whenever you want it, day or night. You do not have to pile it in a mow, rank it up in a shed, or store it in a bin. In fact, you can't store it at all. But there is no reason why you should when you can get just what you need any time. You can turn the switch on the smallest burner to low to heat the baby's milk, or you can make use of the oven and all the burners at once to get dinner for the threshing crew. Current enough for either will be delivered on demand, no more, no less.

I think everyone will agree that it is handier to buy heat in the stove than to buy coal or wood to make the heat. Handier, by far. I like to go out there in the kitchen and turn a switch for enough heat to bring my vegetables to a boil in a hurry, and then I like being able to cut down my order, and take just a quarter as much heat to keep them boiling.

I'm Scotch enough to appreciate being able to buy exact, uniform amounts of heat, heat under perfect control, and to buy it to fit the cooking



The clock on the right turns the current on and off in the oven. The dial at the left is a minute minder to time the cooking on top of the stove.

A light on the stove brightens the task of preparing the meal and is a real convenience.

I have to do. And I'm lazy enough to enjoy getting it just by lifting my hand and turning a button.

Another thing I like about electricity is that some mechanical gadget can control it just as well as I can. Just as well? I am surely flattering myself. It can control it much more accurately and much more uniformly than I can. And the machinery for this control is very simple, just a thermostat and a clock.

The thermostat controls the heat in the oven. I set a pointer to the temperature I want and turn on the current. That thermostat will measure the baking temperature for me, turning the current off and on to keep the heat just right. This means convenience for me, better results, and greater economy of operation, for the thermostat never forgets and leaves the current on longer than necessary. It never lets the oven get too hot, anymore than it lets it cool down.

Because it is so very easy to turn electricity on and off, a clock can do it as well as anybody.

If you want to get ready an oven full of food and will take it cold from the refrigerator and shut it up promptly in the thickly insulated box of the oven, you can safely leave it a considerable

(*Continued on page 20*)

When Mrs. Wm. Eckels, Douglas, Kansas, remodelled her kitchen, she put her range where she wanted it, and built her cupboards beside the chimney.

Upper left: A combination brush and vacuum cleaner proves an effective groomer on a farm in Sussex, England

Left: Using the grindstone for sharpening scythes, weed hooks and other farm implements is pleasant work when a dependable little electric motor does the turning.

Lower left: Duck raising reaches the proportions of Big Business on Long Island, New York. One farm alone raises over a million ducks a year.

Above: Hot springs near Rotorua, New Zealand, make it easy for Maori women to heat water, and even to cook some foods.

Above:
clipper
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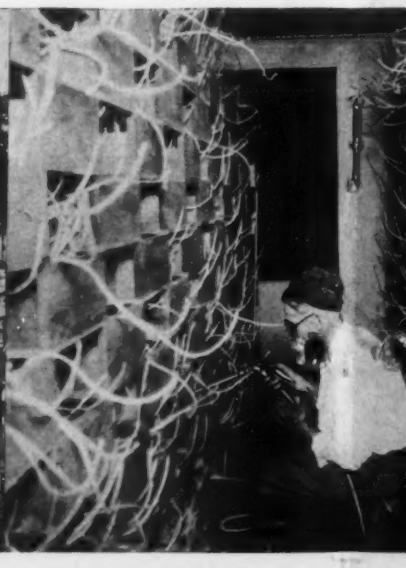
hands v

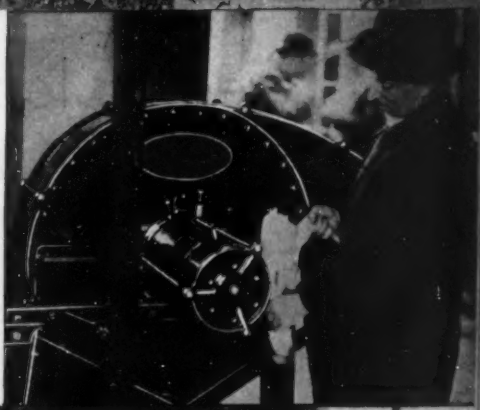
INTERESTING
AT HOME AND

Below: Potato sprouts furnish the di
bugs, which in turn are used to fe
in a California insectary, where the
raised for combating mealy bug infe
bugs are sold to farmers for one-hal



Above: The electrically driven clipper does quick work in shearing sheep, and there are no tired hands when the day's work is done.

Upper Right: Repairing farm machinery is pleasant work during winter and early spring months if the shop is well equipped.



Right: This feather plucking machine was developed by an English inventor. The feathers and down are removed completely and with no damage to the bird's skin.

Lower right: There's nothing like a lathe for making the workshop an interesting place during the long winter months, and it's lots of fun turning out chair, cabinet and table legs and rungs.

G SCENES
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ish the diet for mealy
sed to feed ladybugs,
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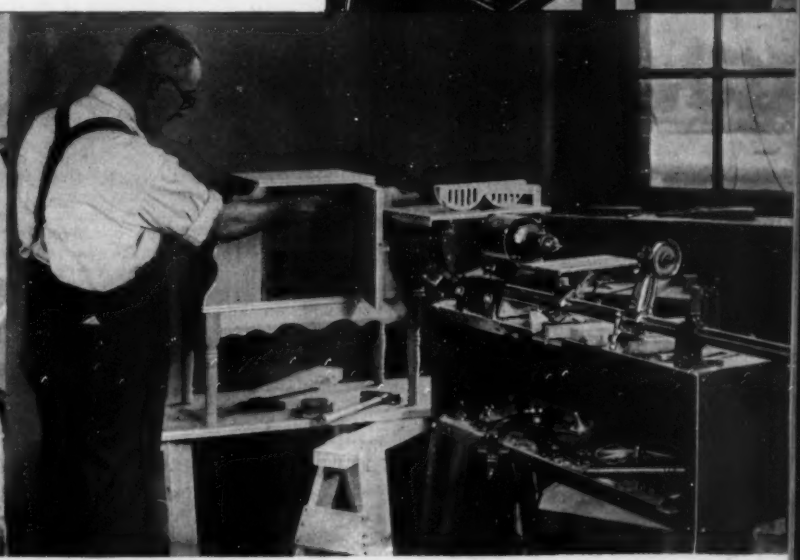


Seed Cleaning is a PAYING PRACTICE

By E. W. LEHMANN

THE Biblical phrase, "as a man soweth" is of particular importance and significance to every farmer just now, not only because of the relation of good seed to the quality and quantity of the immediate crop, but also because of the possibility of infesting the soil with weeds. At seeding time, see to it that your seeds are clean, sound, and as free from weed seeds as possible.

It has been estimated that the annual cost of weeds in America amounts to the huge sum of three billion dollars. Weeds affect the quality and cost of products, and therefore indirectly affect every person. Although averages do not mean much to individual farmers, the average weed tax per farm on the basis of the above estimate is over $450; a part of this cost is paid by the general public. Farmers are paying their part of the cost for growing weeds in greater cost of production, by the purchase of additional equipment, by more cultivations, and reduced yields; they are paying, too, in poorer quality and lower prices of crops grown, and finally, in reduced value of the land itself.

Studies have been made in a few states to determine what is being planted by farmers. In South Dakota, out of 129 samples taken from the seeder boxes only 45 samples had no weeds. Of the remaining, 15 had more than a quarter of a pound of weeds for each bushel. In Wisconsin, 92 out of 155 contained common weed seeds with 27 having noxious weed seeds. All of these 27 samples except one were seriously enough infested with weeds to condemn the seed for seeding purposes. The important consideration is, are *you* going to plant clean seed this spring? Seed cleaning is an important method of weed control and if you do not have noxious weeds already on your farm, it is all important.

The best way to be assured that the seed that you are to plant is absolutely clean and free from weed seeds is see that no weeds are harvested with the seed. A careful field inspection and the roguing of all weeds before they mature is necessary. Farmers who grow seed for the market, local or otherwise, who are careful in the matter of eliminating weed plants from their fields have no difficulty in finding and maintaining a satisfactory market.

The fact that comparatively few fields are entirely free from weeds makes seed cleaning generally necessary. In the state of Illinois, no individual, firm or corporation that sells seed is exempt from complying with the tagging of seed. The farmer who sells seed is required to see that the seed is carefully cleaned, a sample tested, and each bag properly tagged indicating results of test. If seed are cleaned and inspected to protect the buyer, isn't it just as important that each farmer who plants seed from his own or his neighbor's farm give himself this protection?

The problem of seed cleaning and the requirements of the equipment to do a thorough job depend on what is mixed with the seed and also on the degree of purity that must be obtained. By proper selection of screens, certain separations can

be made and various grades of seed obtained, based on size. It should be kept in mind that from year to year as the quality of seed varies, the combination of screens for grading and cleaning a particular variety of seed must be changed.

It seems to be the consensus of opinion that too much stress is put on the high degree of purity and not enough emphasis put on kinds of weed seeds that are in the small percent of foreign seeds in the lot. In other words, 98% purity may be really better from the farmer's standpoint than 99½, if the latter has even a trace of Canada thistle, quack grass, or some other noxious weed, while the two per cent of foreign seed in the 98% purity may be pigeon grass or some other type of weed which is not greatly objectionable.

Fanning mills are the most common type of equipment used for seed separation, but special machines have been developed which make effective separations, depending on the difference in shape of the seeds to be separated. These machines are equipped with disks, cylinders, or other moving surfaces, with little holes or indentations in them of a size or shape to make the separation possible. The disk type of machine was developed originally to separate wild oats and wheat. Successful separation by the spiral gravity type of cleaner is dependent on the round seed rolling faster. As a result they are carried by gravity and centrifugal force to the outer edge of the spiral where the separation is made.

Another means of separation of seeds that is dependent on the characteristic of shape and also the specific gravity is the machine that throws or projects the seeds through the air. Those seeds that are fairly smooth and of relatively high specific gravity will be thrown farther than those seeds that are not smooth and of lower specific gravity. This will give a very accurate separation and has been found useful in the separation of dock and clover seeds.

The Kicker type of seed separator for removing wild oats from wheat also utilizes the characteristic of the shape and size of the seed in operation. The oats being longer than wheat will not pass through the special screen that is used. The openings are so designed that the seed must pass through and around a projection, and the oats will not turn and are therefore kicked out. This same machine can be effectively used for separating barley from wheat.

Reasonably satisfactory results can be secured in the separation of wild onions and garlic from wheat, if the separation is made when the bulblets are plump and full of moisture. After they have dried out and assumed reasonably near the same shape and size of the wheat grains, the separation is more difficult. For this reason both wild oats, which tend to allow the groat to separate from the hull after they have dried, and the small onion bulblets and garlic should be separated immediately after harvest.

The operation of one type of machine that is effective in separating seeds that are of the same shape, size, weight, and specific gravity is dependent on the fact that buckhorn seed is coated with a substance which when moist becomes quite sticky, like mucilage. In operation, to separate buckhorn from clover, the seed are first sprayed with a very fine spray of water, then by means of an air blast the clover is dried while the buckhorn remains sticky. While in this condition a quantity of fine sawdust is mixed with the seed and enough adheres to the buckhorn to form pellets which are much larger than the clover seed, making possible the separation by means of a fanning mill equipped with proper screens. To separate buckhorn seed effectively by this process, it must be done immediately after the seed are harvested, because the characteristic stickiness of moist, freshly harvested buckhorn seed is not so noticeable after the buckhorn seeds are thoroughly dried.

It is out of the question for individual farmers to own and operate a complete line of seed cleaning machines that will remove all weed seeds. There are at least three solutions to the problem where a lot of different noxious weeds are involved: first, to exterminate the weeds before the seed are harvested, which is the best and most practical method; second, to have a cooperative farm seed organization equipped to clean seed thoroughly; and third, to have seed cleaned by a commercial seedsman. In any event, a fanning mill equipped with adequate screens is a desirable machine for many farmers to have to do most of their seed cleaning and grading work.

Seed cleaning is a job that can be done in winter, when time is plentiful.

An Inexpensive
SOIL STERILIZER

By MORRIS H. LLOYD

J. A. CLOW of Angola, N. Y. had need of a means of sterlizing soil for use in his greenhouse which would be both inexpensive to use and effective in results.

His florist business not being large, one flat of seeds of some varieties of flowers is often ample for his needs. It is particularly important, therefore, that such a limited quantity of seedlings grow successfully, since a failure due to diseases can wipe out an entire season's supply.

Having heard of the results obtained with electric soil sterilization at the New York State Agricultural Experiment Station at Geneva and by some growers in the eastern part of the state, he got in touch with the Rural Service Department of the Niagara, Lockport & Ontario Power Company to see what could be done to apply electric soil sterilization to his needs.

The design of sterilizer finally worked out was a box 36" x 16" x 16" in inside dimensions, made of tongue and groove boards one inch thick. It is supported on legs made of 4" x 4" stock. To make the unloading of the sterilizer easy, the bottom is hinged on one side and fitted with hooks on the opposite side. Mr. Clow plans to replace the hooks with regular hinged lock hasps as these are somewhat stronger and are held in place by several screws instead of one.

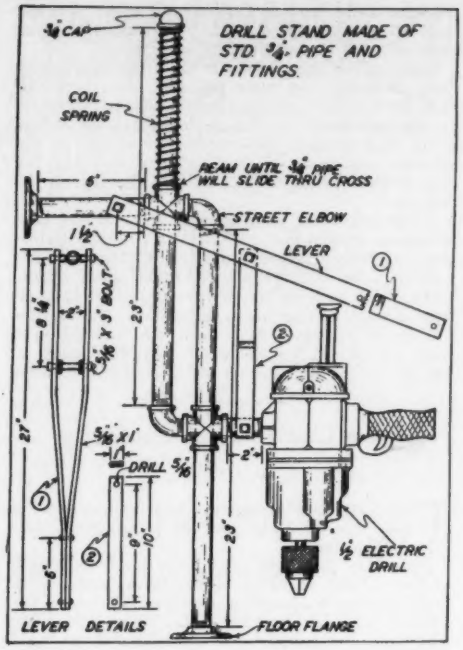
This sterilizer holds five and one-third cubic feet of soil, or about four bushels. This particular size of box was adopted for two reasons, first, that it gave adequate capacity for a greenhouse of the size of Mr. Clow's and, second, that it is of such a size that, with proper connections, it can be operated from a 115-volt outlet as well as from a 230-volt outlet.

The heaters are four in number, running lengthwise of the box, and are eight inches apart. Each is rated at 350 watts, 115 volts. These heaters consist of ¾-inch galvanized pipe filled with porcelain tubes placed end to end, with a coiled heating wire stretched through the tubes and secured at each end to suitable terminal bushings. By the use of such rugged, waterproof heaters no electricity passes through the soil, all sterilization being accomplished by heat alone. This type of heater was designed by Mr. Maurice W. Nixon, Rural Service Engineer of the Empire State Gas & Electric Association, stationed at Cornell University.

As to operation, Mr. Clow waters a batch of unsterilized soil until it is somewhat wetter than it should be for use in flats. He then places it in the sterilizer and turns on the current which is allowed to run for five or six hours. This brings the temperature of the soil up to around 180 degrees Fahrenheit. The current is then turned off and the soil is dumped into a bin away from any other soil and is allowed to stand a few days before being used. This permits the ammonia liberated by heating to combine with other elements in the soil to form nitrates, which are beneficial to plants. Thus four bushels of soil can be sterilized with 7 to 8½ K.W.H.

Upper: Exterior view of sterilizer showing simplicity of unloading by means of hinged door in bottom. Terminal boxes for the heating cables are located on the end of the box.
Lower: Interior view of unit, showing arrangement of heating units.

Mr. Clow has been well pleased with his sterilizer which, more properly, should be called a soil pasteurizer, since it does not make the soil sterile but frees it from nematodes and fungi and kills weed seeds very effectively.



Line sketch showing construction details of electric drill.

Here's an ELECTRIC DRILL STAND That's Easy to Make

By HOBART BERESFORD

MOST of the modern portable electric drills are provided with a standard pipe thread fitting for the handle used for the drill stand mounting. This makes it possible to use standard pipe fittings in changing a portable electric drill to a bench drill, thereby greatly increasing its value in the farm shop. The drawing shows the completed outfit.

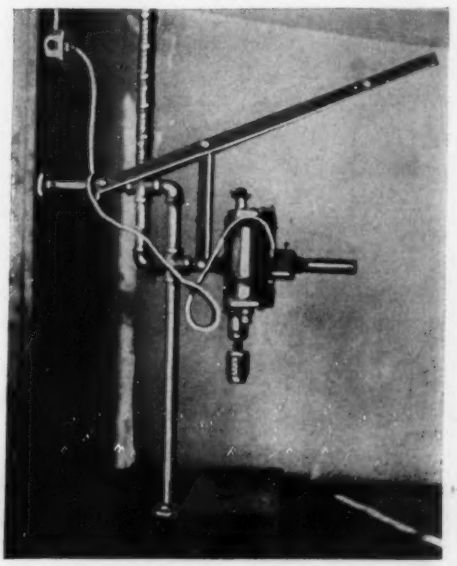
Work Layout

The first step is to cut, from 3-4 inch pipe, one 7-inch and two 24-inch lengths. Both ends of all three pieces of pipe should be threaded with standard pipe threads. In threading the pipe the die should be run on until the end of the pipe is flush with the face of the die. The cross fittings, which are used to guide and limit the vertical motion of the drill mounting, should be reamed until the two vertical pipes just slide through without binding. It may be necessary to remove the rough spots on the pipe with a file. Coil springs are used to hold the drill in a raised position. The stand should be mounted, preferably on the end of the work bench where a swivel vise may be used to help hold mateials being drilled.

Care in Use of the Drill

All holes should be located by exact measurement and center punched to facilitate starting the drill. When drilling large holes a small pilot hole should be drilled first. Before starting the drill make sure that the chuck holds the drill securely and that the chuck wrench has been removed and replaced in the drill handle. Do not leave the wrench in the chuck when removing the drill after the job has been completed.

To use the drill as a portable tool, first wind the cord around the handle and pistol grip, and then unscrew the threaded connection. When using the electric drill as a bench drill on the pipe-fitting stand, be sure that the stock is held securely and avoid feeding the drill bit too fast.



The assembled unit ready for workshop use.

Switch to Convenience

(*Continued from page* 13)

time. You may fix the dishes in the morning and set the clock to turn the current on at ten-thirty. Then when the men come in at noon, they can dish up a hot dinner for themselves even though you aren't there. Or you can set the clock to turn the current on at four and there will be a hot and appetizing supper ready when you get home.

It is real convenience to cook with a heat that is turned on or off automatically for you when you are down in the basement washing, working in the yard, or off the farm entirely. With a heat that is under perfect control like this, you can say a last good-bye to pot watching and to oven tending as well as to building and stoking fires.

The electric ranges themselves are more convenient than the old fashioned cook stoves, too. For one thing, you can put them where you want them without paying any attention to the chimney. Many have lamps that shine on the working surface giving a good light wherever the range is set and whatever the day outside.

Many are built with an insulated well on the cooking top. There is a low wattage element at the bottom, and a kettle with an insulated cover fits inside. This cooker is convenient and economical for food that needs long, slow cooking, for steaming, and for making soups.

Some have a warming drawer where you can heat up rolls or keep dinner hot. The upper unit in the oven of an electric range becomes a broiler as soon as you slide a broiling pan under it. A great many of the stoves are made table high and flat on top so you can work on top of the oven right next to the burners where you are cooking. Since the oven is well insulated your table will not be hot to work on either.

Some stoves have lights in the oven, lights that flash on when you open the oven door. All of them have sockets where you can plug in the toaster, the percolator, or the electric tea kettle. And many of them have most attractive clocks on the splasher panel at the back, clocks that tell the time in the kitchen as well as turn the current off and on.

Folks call them gadgets, all these various conveniences we find in the new electric ranges. Sometimes they say "gadgets" in a tone that implies that gadgets, after all, are matters of no great importance. I'm inclined to think, though, that it is almost always a man who speaks thus. As for me, I'm much impressed with them, and when I view them altogether, I insist anew that they make an electric range the handiest stove I have ever seen.

Swung from the door or set into the top of the stove, an insulated cooker is one of the conveniences of an electric range.

Farm Chats About Electricity

By Polly Power

THE bare maples make a lacy arch above the lane that leads to the old Jones place, near Olney, Maryland.

Jolly Mrs. Josiah Waters Jones greets her guests at the ancient doorway of the farm house in the true, hospitable Maryland manner. She takes justifiable pride in showing them about the place. The farm is a happy blend of modern comfort and the early southern charm of nearly a hundred years ago.

With the extension of power lines being made possible by the Rural Electrification Administration many more farms will be found like this one all over the country.

Old as it is, the house has been kept in excellent repair. Several years ago the Joneses, with several neighboring families, modernized their farms when an electric power line was extended to their area. Arrangements were made through the National Rural Electric Project, sponsored by utility companies with the cooperation of the University of Maryland.

"I wanted electric light very much," Mrs. Jones told me when I called there not long ago, "but I didn't realize how much electricity would mean to us, or the extent of its uses.

"At first, I didn't think I would want very many appliances in the house," she continued, "but when Mr. Jones put in electric brooders and lights in the poultry house, and bought a general utility motor, that he uses for practically everything, and a feed grinder, and goodness knows what—I couldn't allow myself to be outdone. Besides the electric refrigerator and the range, I have a vacuum cleaner, water heater, bathroom heater, lots of small appliances and a sewing machine.

"I've always done a lot of sewing, having four daughters. The oldest girl lives in a little bungalow across the main road. When she was first married she lived in a city apartment and had all electric conveniences, so when they came back here to live she was not satisfied to live in any of the other five houses on the farms, because at that time they were not electrified.

"The three other girls, like my eldest, are all college graduates and two of them are at home. One is remodeling her room now. She spends much more time at home than most girls. They all do, I

(*Continued on page* 26)

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

WARM SPOTS for COLD DAYS

THIS last winter my husband's mother has been living at our house. At first she was woefully chilly in the regular even heat of 70, 72, or even 75 degrees, because she had been used to a stove she could pile full of big round chunks till the sides glowed red hot. It might not be warm upstairs, or out in the hall, or even off in the far corner of the living room, but that did not matter so long as it was piping hot where she sat in front of the stove.

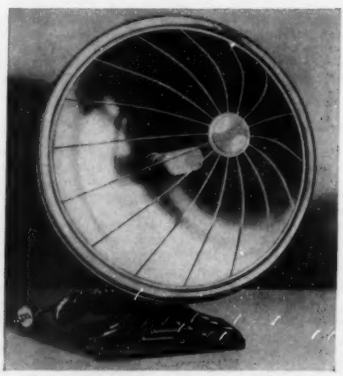
Besides that she was used to the cheering warmth of a little hot soapstone she kept in the oven of the kitchen stove when it was not tucked under her feet or wrapped in her apron to warm her hands.

We had to do something about those warm spots and do it right away. We couldn't set up a stove in the living room. Nor did we have in all our house any place to heat a soapstone. But we ourselves are used to getting heat by wire and we found no difficulty at all in coaxing her to enjoy it, too.

First we got out our soft eiderdown covered heating pad and plugged it into the convenience outlet nearest her chair. Then we pushed the button and told her to wrap her hands in that. As soon as the gentle warmth began to steal through her hands and arms, a look of dazed but joyous surprise came over her face.

"Why this beats a soapstone every which way," she said in amazement. "It's so soft as well as warm. How long will it stay hot?"

We assured her that the pad would stay just that hot as long as the cord was plugged in, never

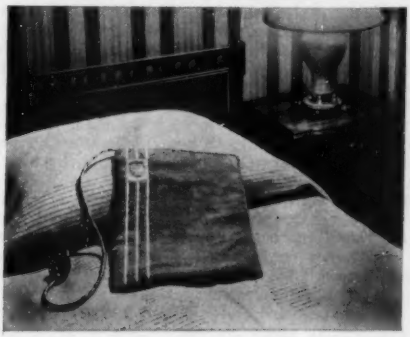


needing to be heated up for her before she could enjoy its comfort. Then, because there is, after all, quite a considerable amount of heat in a 60-watt heating pad, we showed her how pushing one button would cut the heat in half, and pushing another would reduce it still further.

There is a thermostat in that pad to control the heat, too, so we have no worry about its overheating when she drops to sleep with it on her lap, or tucked under her shoulder when she is in bed at night.

Mother admits that the heating pad makes a very acceptable substitute for a soapstone. Coming into her room, I find it laid across the front of her legs, held on her knees, or wrapping up her hands.

Our heating pad is not new, modern styles are even more attractive. Most of them have three temperatures, and their thermostats give them safe control of those temperatures. These thermostats will not make the radio screech when they turn the current on or off, either. Some pads are finished with moisture-proof material under the eiderdown. The other day I saw a little single heat pad that used but 30 watts. It is big enough to tuck



under your cheek or to push down in the baby's crib to warm his feet on cold nights.

But that was just part of the problem. To give her a lot of heat all at once, a lot of heat she could bask in comfortably, we turned full on her the glow of a radiant heater. She didn't want it on very long, we found, but it did serve to warm her up quickly the first thing in the morning or when night was closing down.

To add a few degrees to the temperature of a bathroom that seemed already overheated to our younger bones, we used a circulating heater that has a fan to blow the air over heating coils and then out all through the room.

All of these heaters have several advantages over stoves. We can carry them anywhere mother wants to sit, plug them in and get heat for her on the instant. They are neat and tidy, too, and need no waiting on to keep their heat constant.

• • •

The GO-BETWEEN

TAKING care of electric appliances may very properly begin with the cords which go between them and the outlet of the supply of electricity. There are all kinds of cords, light cords and heavy cords, cords for lamps, cords for heating devices, and cords for use in damp places and

where contact with metal is unavoidable. And some of these cords are better than others.

You can pick them out yourself by a little bracelet of paper that circles the cord. It bears the words "Underwriters' Laboratories Inspected Cord."

We must admit that cords have been subjected to considerable misuse in many homes. Their very flexibility gets them into trouble. Of course, we can't put them up somewhere out of reach, nor can we guard them with heavy covers. They have to be light and limber. Because they are, there is frequent temptation to make them take the place of necessary additional wiring in the house. That is a mistake. They ought not be strung along baseboards, poked behind radiators, or stretched under rugs to reach a lamp. They should never be run through a door jamb into a closet, or back hall. The frequent opening and shutting of the door will break the protective covering over the wires that carry the current. For safety, and for better service, install permanent wiring and regular convenience outlets.

When you want to disconnect a cord from the convenience outlet, pull it out by the plug, never, oh, never, by yanking on the cord. This loosens the connections and sometimes breaks the fine strands of wire inside. Bending them sharply may do this, too.

That brings us to the right and wrong way to hang up cords. It is best to hang them in loose loops over a large smooth peg if possible. Stringing them up over a nail does bend them pretty sharply.

Examine your cords frequently. Frayed cords, cracked plugs, or plugs with loose screws are fire and accident hazards. Frayed ends should be cut off and a new connection made. When the covering wears off extension cords, or when sharp strands of wire poke through the insulation, they should be discarded and replaced with sound ones.

The United States Bureau of Standards, in Circular 397, has a few things to say about using these cords that bear on the safety of the folks who use them rather than the wear and tear on the cords.

"Cords should be so located and used as not to be within reach of radiators, or set tubs, kitchen ranges or sinks, bathroom fittings, cement basement floors or other objects well connected with the ground, whereby a person touching the cord may become part of an electric circuit and receive a shock. Cords should have special waterproof coverings where used in laundries, bathrooms and similar places, unless connected to heating appliances for which a special type is supplied. In general, the floor on which users stand in such places should be covered with dry wood, rubber or other insulating material, and caution observed in handling the cord."

• • •

ON—

WITH THE ONION

IF you like onions as well as I do, your supply never runs out. In soups, in salads, in meat loaf, in scalloped potatoes, they give added zest and flavor the dishes would be poorer without. But that is no reason why they should not appear again and again in their own right. I myself never tire of them boiled whole and served with plenty of butter and seasoning, but in the interests of variety a cook has to keep an open mind about such things I have no quarrel with folks who

want to make them whole, serve them with a white sauce, slice them thin, dip them in batter, and fry them in deep fat, or even scallop them with tomatoes with peanuts, or with cheese. It's pretty hard to hurt a good onion.

If you want to dress it up considerably, some day try this recipe from the Bureau of Home Economics of the U. S. D. A. It offers a highly decorative and delicious dish.

Stuffed Onions

5 large mild onions
3 tbsp. butter
½ cup chopped celery
2 tbsp. chopped parsley
2 cups bread crumbs
1 tsp. salt
pepper

Skin the onions, say the directions, cut in half crosswise, simmer in salted water until almost tender, then drain. Remove centers and chop fine. Melt 2 tbsp. fat in frying pan, add the chopped onion, celery and parsley and cook for a few minutes. Push the vegetables to one side, melt the rest of the fat and add to it the bread crumbs and seasoning. Fill the onion shells with this mixture, put them in a covered baking dish and bake in a 350 degree oven for about half an hour, or until onions are tender. Take the cover off the dish for a few minutes before the onions are done to brown the tops.

Hot Stuff

Caustic Critic: "Gee, but you have a lot of bum jokes in this issue."

Badger Editor: "Oh, I don't know. I put a bunch of them in the stove and the fire just roared."

"Did you get home all right last night, sir?" asked the street car conductor.

"Of course—why not?" came back the passenger.

"Well, when you got up to give your seat to that lady last night, you were the only two passengers in the car."

Wild

City Girl: "And I suppose at dusk, when the sun is stealing over the Rockies in purple splendor, you cowboys are huddled around the campfire broiling venison and listening to the weird, eerie, unnatural howlings of the coyotes."

Rattlesnake Gus: "Well, ma'am, not ezzactly. Usually we go inside and listen to Amos and Andy."

—Bill Panther.

Oh, These Husbands!

She woke up in the early hours of the morning and nudged her sleeping husband.

"Wilfred," she said in a hoarse whisper, "Wilfred, wake up! There's a mouse in the bedroom!"

Hubby unwillingly sat up. "Well, what about it?" he groaned.

"I can hear it squealing," she said fearfully.

"Well, do you want me to get out and oil it, or something?" he snapped.

ON THE AIR

Conducted by JEROME J. HENRY

Fritzi Scheff Has Colorful Career

BORN in Vienna, the daughter of a famous musician, Gottfried Scheff, Fritzi Scheff made her debut as "Martha" in Munich in 1898. She came to America in 1900 at the advice of Maurice Grau, famed impressario.

Upon landing she went straight through New York, across the continent, to make an appearance in San Francisco. Brought back to New York in

Skyland Scotty Wiseman and Lula Belle came from the North Carolina hills to Chicago radio studios to be heard on the Pine Mountain Merrymakers program.

1901, she made an appearance in "La Boheme" on 24 hours' notice.

Fritzi gained the name of "The 'Kiss Me Again' Girl" from singing that famous song in the operetta. For the next 25 years she played in various musical plays, then appeared occasionally on the air. Now she is heard on a regular network program.

In more than 30 years in the theatre she has never been late. She has no idea how many times she has sung "Kiss Me Again," but she is certain that it is at least one time too many.

• • •

Duck A Little Too Good At Sound Effects

A DUCK that objected to its role as radio stooge and finally rebelled gave the announcers of a recent KVI broadcast of the Western Washington Fair some anxious moments before being brought into line again. A barnyard playlet was being broadcast by the Tacoma station direct from the fair grounds, and the prize winning duck was brought in as an authentic sound effect.

Every time his owner pinched him the duck obediently quacked for the radio audience. After the third "quack," however, the barnyard broadcaster thought things had gone far enough, and voiced his objections in no uncertain terms, quacking so loudly and lustily that no other sound could penetrate the mike. The playlet continued only after an announcer gently but firmly closed the duck's bill with a determined hand.

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Quips and Tips on Radio Stars and Programs

PHIL BAKER'S role as comedian and musician provokes a strange mixture of response from fans. Since he launched his "Great American Tourist" program over CBS stations the veteran comedian has received enough odd letters to keep a psychologist perplexed for years.

"What a shame, Mr. Baker, "writes a Maryland school teacher, "that such a fine musician should have to stoop to making jokes for a living. Isn't your art enough? Why debase it for the sake of money?"

"You give me a pain, Baker," states a Brooklyn pipe-fitter. "You're pretty funny, but where you got the idea of playing an accordion was a smart act is beyond me. What's the matter?"

A woman's organization in Mississippi sends a letter signed by 100 persons asking him to mention their group in his broadcast, "in any way, even if it's silly."

The effect of years of rigid training in the U. S. Marine Corps was demonstrated the other day when Captain Taylor Branson, conductor of the U. S. Marine Band, was leading his musicians in Washington. It was an important occasion, this broadcast, and Warren Sweeney, CBS announcer, later prevailed upon the "mike shy" veteran marine to say a few words on the air. But all the time he spoke he whipped his trousers with his baton—producing a whip-lash effect—as though giving commands to a company of leathernecks. Then he clicked his heels together, executed a snappy about-face and walked away as straight as a ramrod. Most of his words were lost in the whip-lash effect and the clicking of his heels. But Captain Branson did his part like a general.

Incidentally, the Marine Band offers real band music, something none too plentiful on the air these days. In addition to many special broadcasts on various occasions, you can hear the Marines play regularly on the first Saturday of each month in the National 4-H Club program, NBC stations, Blue network.

A lad from Boston, city famed for beans and

"Plizz, Plizz, mine Cleo, I have et too many happles already," Mark Anthony protests as he is tempted with a prize apple. Louis Sorin and Alice Frost are now playing in "Shakespearean Debacles."

history, is Lucy Monroe's most ardent fan. The first of each month is more than pay day to Lucy. For it is then that she regularly receives a handsome leather-bound volume. Her young admirer sends each book to Milan, Italy, for a hand-tooled leather cover, then it goes to Miss Monroe's apartment in New York.

Hal Kemp may be a band leader, but when he goes home he plays phonograph records for his amusement. Where's that person who originated the idea that it was so funny for a street car conductor to take a street car ride on his holiday?

Paradox: Benay Venuta, noted radio actress, loves dark red roses. Yet she strenuously objects to having her finger nails painted dark red by her manicurist.

Bears witness time marching on. The whole responsibility for this story is laid at the doorstep of Rod McKenzie of Salt Lake City, who camps out a good deal in the Jackson Hole country of Wyoming. Rod's cabin has no electricity. That alone would be a sad state of affairs for those hundreds of us used to clicking switches. But Rod listens to his automobile radio outside. For companions he has a bear and her cub who appear by night when the "March of Time" comes on. Wonderingly they listen to the world's news and when the program ends they lumber off into the night. We won't swear by this story, but it makes good reading at that.

We've heard worse and more exaggerated reports, such as one about a radio celebrity who has faced countless dangers, as stories would have it, in remote corners of the world. All of which brings to mind the remark of Mark Twain upon hearing a false rumor that he was dead. Said this great author, "The reports of my death have been grossly exaggerated."

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Listeners' Opinions Vary

CONTRASTED with thousands of appreciative letters received in response to broadcasts of the New York Philharmonic Symphony Society's request for favorite compositions from its radio listeners, two letters recently illustrated divergent points of view on music. From Washington, D. C., a citizen wrote: "Please do not feature a Bach program as I would be obliged to turn off the radio. I might also say the same thing for Wagner."

From Portland, Oregon, a "music lover" wrote: "To be asked to name a favorite living composer is like being asked to name a favorite gangster."

A youngster from Madison, Wisconsin, solved his dilemma by requesting "more music by Bach and Duke Ellington."

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ASK YOUR POWER COMPANY for a FREE TRIAL

Tropical Foxes

(*Continued from page* 11)

so as to produce the finest pelts in coloring and size. A vixen (Mrs. Fox to you) will whelp from one to nine pups, this event occurring early in the Spring. By October these pups have matured sufficiently and are ready for the fur market, their pelts bringing as high as $250.00 a piece.

A Show will be held at Gardena this year, for all classes of Silver Fox, and exhibitors from all over the country will compete for the blue ribbons and prizes to be offered. There are eighty-two phases to be considered in judging points of a Silver Fox. This Show will afford an opportunity for comparison between Northern and Southern bred Fox and should prove a most interesting exhibit to Fox breeders as well as the public in general.

Rural Electrification

The Bruce Publishing Company, of Milwaukee, Wisconsin, has just announced a new book, "Rural Electrification," by J. P. Schaenzer, B. S., formerly Project Director, Rural Electrification, University of Wisconsin, and now Agricultural Specialist, U. S. Dept. of the Interior.

The book, 259 pages and 165 illustrations, sells for $1.72.

It is a splendid treatise on the subject and is designed for use in schools where the principles of farm electrification are taught.

The author first gives an interesting picture of electricity as a means of power, its manufacture and distribution, and its introduction as a means of service to rural districts. This is followed by a study of the installation, operation, and maintenance of electrical mechanism used on the farm and in the home. Since satisfactory results from the use of electrical equipment depend upon adequate, safe, and convenient wiring, the author includes considerable information on proper materials and plans for wiring the various farm buildings. This material is supplemented by numerous illustrations. The author then discusses a large number of applications for the farm and home; the student is given an understanding of all electrical apparatus peculiar to the farm and taught how to care for it properly. Numerous tables and charts incorporate abundant factual material relative to electrical data as applied to farm life.

"Rural Electrification" may well be classed as a simple, concise, yet comprehensive treatment of electricity and electrical mechanism, and it makes a distinct contribution to the field of rural electrification.

Loneliness

Some one speaking of rural life tells of a farmer whose wife became insane, and the farmer said, "I don't see where she caught it. She's not been out of the kitchen in fifteen years."

At a recent agricultural show a certain cleric expressed himself as appalled at the masculine costumes worn by some of the girls present. Looking at one youngster, he said: "Cropped hair, cigarette and riding breeches—is it a boy or girl"

"A girl," answered his companion. "She is my daughter."

"My dear sir," replied the flustered cleric, "please forgive me. I'd no idea that you were her father."

"I'm not," came the reply. "I'm her mother!"

Questions and Answers

Conducted by H. J. GALLAGHER

Electric Fence to Protect Rabbits

Question: *I am interested in extending an electric wire around my rabbit house so it will give enough shock when touched to keep the dogs away from my rabbits. How would I go about this?*

J. W.,
Benton Harbor, Mich.

Answer: There is a commercial electric fence on the market that would probably answer your requirements in keeping dogs away from your rabbit hutches. The fence is manufactured by the Prime Manufacturing Company, Milwaukee, Wisconsin.

Investing in an Electric Milker

Question: *Are we too small to invest in an electric milker on a 30-acre farm, 14 to 16 cows?*

G. K.,
R. D. 4, Greensburg, Penna.

Answer: Under ordinary conditions a milking machine will pay its way with a herd of fifteen cows. If the suction method of washing the milking machine is used, this number may be reduced to ten cows, the suction method usually requiring about the same amount of time as milking another cow. Washing the machine by the brush method takes four or five times as long as by the suction method. Reports have been received by the National Committee on the Relation of Electricity to Agriculture where farmers with as few as six cows consider the mechanical milker a profitable investment.

Motor Size for Silo Filling

Question: *I am very much interested in your front page regarding electricity for silo filling in July magazine,* ELECTRICITY ON THE FARM. *I have only a two wire system, 60 cycle single phase. I'd like this motor for buzzing wood as well as silo filling. Would you think a 5 h.p. large enough for an 11 inch blower, or maybe 14 inch throat, and what length belt would be most suitable? What amount of expense would I have to go to regarding other than the motor, switches and the like, if any, outside of the lighting company?*

K. H. G.
R No. 2, Mayville, New York

Answer: The article Filling the Silo in the July, 1935, issue of ELECTRICITY ON THE FARM by T. E. Hienton, is a narration of facts that have been definitely proven by practical experiences. Recently, in one county I visited three farmers who are enthusiastic operators of ensilage cutters powered by 5 h.p. motors. In each case the farmer has reduced his help to a three or four man crew, has discontinued the practice of exchanging labor and has reduced his power cost to approximately 1 kw.-hr. per ton of ensilage. The size of one cutter was 11 inches, the other two were 13 inches. My experience favors the 13 to 15 inch cutter over the 11 inch. The narrow throat of the smaller cutter offers more resistance to the passage of bundles than do the larger openings.

There is no definite rule as to the best length of belt to use. I have seen successful flat belt operations with the pulley centers as close as two feet and as far apart as 24 feet. The average length of belt would probably allow about 10 ft. between centers of pulleys. V-belt operation is invariably associated with close pulley centers.

Successful silo filling with a 5 h.p. motor depends upon close observance of the rules given by Mr. T. E. Hienton, particularly the ones applying to sharp, correctly adjusted knives and a minimum of 1/8" clearance between the tips of the fan and the drum. The diameter of the blower pipe should not exceed seven inches.

A two-wire system is inadequate for 5 h.p. operation. Three-wire 110-220 volt service is necessary. When the service is changed, it would be advisable to install 100 ampere entrance capacity. This will care for present and future demands.

It is highly desirable that all motors be protected by a thermal overload control switch, especially the larger, more expensive motors that are constantly subject to heavy overloads.

A starting and stopping control switch for a 5 h.p. motor costs about $30.00. In starting equipment, such as an ensilage cutter, it is desirable to bring them up to speed slowly. This can be done with the ordinary protective switch by giving the motor successive "shots" of current by turning the switch on and immediately off. When the cutter attains operating speed, leave the switch in the "on" position.

A six inch pulley on the motor and a 24" pulley on the cutter is the usual assembly.

Installing Water System

Question: *We are attaching hereto a rough sketch of our present water system, operated with a number 40 Rife ram. It is very likely we will soon have to repipe the drive line and rebuild the working parts of the ram, and we were considering the installation of an electric pump to either replace or supplement the ram.*

We do not have current close to the spring. Our setup at the house is substantially this: from the transformer to the meter is approximately 300 feet. This is single phase and 110-220 over number six wire. From our meter, or closest point of contact with the line, to the ram or proposed location of the motor would be about 3,000 feet. We would like to have you make recommendations for this installation. We presume it would be out of

(*Continued on page 26*)

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What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Water Heater

Lower rates for water heating on farm electric lines in many sections of the United States and newly modernized farm houses have stimulated interest in electric water heaters for use in farm households. The installation of bathrooms has

been made possible in part by the increase in farm income in many localities in recent years. These new bathrooms are accompanied by a need for hot water and electric heaters are proving to be the solution in many cases.

A new model electric water heater, the product of a well known manufacturer of electric water heating equipment, features square corners and straight lines which fit it into the kitchens of farm houses, many of which are not equipped with basements. This heater is manufactured in 15 and 40-gallon sizes, the first being 16 by 18 inches, 48 inches high and the second, 20 by 22 inches, 60 inches high. Two heating units are mounted vertically in each model and these may be operated together or so that only one is in operation at any time. The smaller size is equipped with two 1500-watt and the larger with two 2,000-watt heating units. Insulation is of cork with a minimum of three inches in either model. The temperature adjustment provides for a range from 120 to 180 degrees F.

Medicine a La Carte

Friend: "Why do you always inquire what your patients eat? Does it help your diagnosis?"

Doctor: "No, but it helps my charges for professional services."—Passing Show.

Farm Chats About Electricity

(*Continued from page* 20)

guess. Having become interested in antiques, she found that we have quite a few rare pieces right here in our home. It was she who insisted that we have some of the old oil lamps electrified, and I must say they are pretty, don't you think so?"

I did think so. Hanging by an iron chain in the reception hall was one of the most effective lamps that I had ever seen. It was held by a hand-wrought frame of great beauty and had been brought from England more than a half century ago. At the daughter's suggestion it has been electrified and now turned on and off by a wall switch. There were other electrified lamps, and most of the new ones were of Colonial design. The effect in the old house was charming.

If every girl's home was as pleasant as this, they would never go far from it, I thought as I drew my coat close against the wind and headed for town.

Questions and Answers

(*Continued from page* 25)

the question to use 110 *volts on account of the loss in so long a line. Could we obtain sufficient voltage to operate satisfactory a pump on either* 110 *or* 220, *and what size wire would be necessary. We would appreciate your comments.*

J. O. L.

Answer: A spring with a fall of 25 feet, as indicated by the sketch, offers excellent possibilities for hydraulic ram operation.

Where the height of fall and volume of water are sufficient, the big problem is usually one of storage. It is seldom that a reservoir can be located at advantage to insure general distribution; it is often practical to pump water into storage with a ram and install a pressure pumping system from the reservoir for general distribution.

If a new reservoir has to be built the cost of construction and the repair of the ram should be compared with the cost of an electric pump plus sufficient capacity and the electric service to the pump.

A 1 h. P. 230-volt motor requires approximately 6.3 amperes. Two No. 4 wires will conduct 6 amperes, 230 volts, a distance of 3,000 feet with less than 5 percent voltage drop which would be satisfactory for motor operation.

CLASSIFIED ADVERTISING

MANY YEARS OF SPECIALIZATION enable the Lyon Electric to save you money when buying and operating electrical poultry equipment. Practical poultrymen throughout the nation endorse the All-Electric Lyon Line of BROODERS—WATER WARMERS—ALARMS (Burglar, Fire, Temperature, Power-off)—TIME SWITCHES for hen house lighting—HEATING AND THERMOSTATIC MATERIAL for homemade equipment. Write for catalog and data on NEW FAN VENTILATED BROODER, etc. Dept. EF, LYON ELECTRIC COMPANY, San Diego, California.

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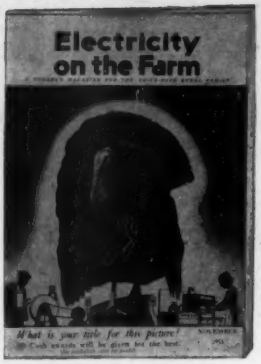

NOVEMBER COVER

COVER TITLE CONTEST

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And keep all well-fed."

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R.F.D. 1, Royersford, Pa.

Nine $2.00 Cash Prizes

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SARA FERGUSON, R.F.D. 3, Box 211, Waukesha, Wis.

"The Pilgrims crowned him,
Now electricity browns 'em."
DONALD R. GIERENS, R.F.D. 7, Platteville, Wis.

"Electricity grinds the steel in the workshop, and steals the grind in the kitchen for a Happy Thanksgiving."
DONALD E. BOWMAN, R.F.D. 1, Lykens, Pa.

"Putting the turkey 'on the spot,'
The first one cold and the last one hot."
EARL RENK, R.F.D. 1, Monmouth Junction, N. J.

"Facing electrifying facts—
The oven and that keen ax."
MRS. GEORGE HERRING, R.F.D. 1, Bargersville, Ind.

"Electricity transformed into motion and heat
May transform a turkey into a Thanksgiving treat."
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"Electricity is the word,
It grinds the ax, and cooks 'the Bird'."
ANNIE MOBLY, R.F.D. 3, Box 24, Elizabethtown, Ky.

"Sharpen the ax with a turn of the electric switch,
And roast the turkey without a hitch."
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"The traditional bird,
Roasted electrically is the last word."
MRS. ELSIE HUSSEY R.F.D. 1, Lawtona, N. Y.

RULES
for
JANUARY CONTEST

The Rules are simple, but read them carefully.

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash, and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles should be brief — the shorter the better—and short slogans will be given preference over rhymes.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before February 1st.

Winning names and titles will be announced in the March issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

My title for the January Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

(a) What do you consider the most unusual and interesting application of electricity on your farm?.....

.....

.....

My name is..... R.F.D.....

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This magazine tells you how other farmers are profiting from a greater use of their electric service. If you have any questions or desire further information—

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